



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,172	01/17/2006	Christian Block	14219-073US1	5286
26161 7590 03/06/2007 FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			EXAMINER LU, ZHIYU	
			ART UNIT	PAPER NUMBER
			2618	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/06/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/519,172	BLOCK ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Zhiyu Lu	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 6 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In the substitute specification filed 12/14/2006, Applicants have replaced "by means of a insulator" with "via a circulator" in line 20 of page 3, which is different from its original filed meaning. Thus, it is considered as a new matter introduced in the substitute specification and claim 6.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2618

3. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation "passive components" in line 2. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heinonen (US Patent#5896562) in view of Toda et al. (US Patent#6751471).

Regarding claim 1, Heinonen teaches a circuit arrangement for use with a mobile telephone, the circuit arrangement comprising:

a transmitting circuit comprising:

a first signal line that corresponds to a first frequency band (DCS, TXC1 of Fig.

3);

a second signal line that corresponds to a second frequency band (GSM, TXC2 of

Fig. 3);

a switch (380 of Fig. 3) that connects an antenna to one of the first and second

signal lines;

a first amplifier (370 of Fig. 3) in series with the first signal line;  
a second amplifier (390 of Fig. 3) in series with the second signal line;  
a first band-pass filter (372 of Fig. 3) between the first amplifier and the switch,  
the first band-pass filter having a frequency range that corresponds to the first frequency  
band (column 6 lines 1-12); and  
a second band-pass filter (392 of Fig. 3) between the second amplifier and the  
switch, the second band-pass filter having a frequency range that corresponds to the  
second frequency band (column 6 lines 13-28); and  
a receiving circuit (Fig. 3).

But, Heinonen does not expressly disclose the receiving circuit comprising: a third signal line that corresponds to a third frequency band; and a third band-pass filter in series with the third signal line; wherein the third signal line comprises an only signal transmission line in the receiving circuit for passing signals from an external device.

Toda et al. teach a receiving circuit comprising: a third signal line that corresponds to a third frequency band; and a third band-pass filter in series with the third signal line (401 of Fig. 14); wherein the third signal line comprises an only signal transmission line in the receiving circuit for passing signals from an external device (receiving part of Fig. 14).

Note that transmitting circuit of Toda et al. was a combination of two transmitting lines (Fig. 3), which would have been obvious to one ordinary skill in the art to do the combine/separate modification on the transmitting circuit in term of application.

Art Unit: 2618

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the receiving circuit of Heinonen in light of Toda et al.'s teaching on combining two receiving lines, in order to reduce circuit size and cost.

Regarding claim 8, Heinonen and Toda et al. teach the limitation of claim 1.

Heinonen teaches the first and second band-pass filters have attenuation curves that can be brought into approximate alignment by shifting along a frequency axis (inherent since both filters are for transmitting portion with respect to different frequencies).

2. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heinonen (US Patent#5896562) in view of Toda et al. (US Patent#6751471) and Young (US Patent#6643522).

Regarding claim 2, Heinonen and Toda et al. teach the limitation of claim 1.

But, Heinonen and Toda et al. do not expressly disclose wherein the circuit arrangement further comprises an isolator between the transmitting circuit and the receiving circuit.

Young teaches an isolator between the transmitting circuit and the receiving circuit (52 of Fig. 5, column 5 line 65 to column 6 line 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate isolator between transmitting circuit and receiving circuit taught by Young into the modified circuit arrangement of Heinonen and Toda et al., in order prevent signal interference between transmitting circuit and receiving circuit.

Art Unit: 2618

3. Claims 3-5, 15 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heinonen (US Patent#5896562) in view of Toda et al. (US Patent#6751471) and Newell et al. (US Patent#5815804).

Regarding claim 3, Heinonen and Toda et al. teach the limitation of claim 1.

But, Heinonen and Toda et al. do not expressly disclose the first and second band-pass filters comprise ceramic filters.

Newell et al. teaches using ceramic filters (column 5 lines 46-56).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate using ceramic filter taught by Newell et al. into the modified circuit arrangement of Heinonen and Toda et al., in order to be suitable for application usage.

Regarding claim 4, Heinonen, Toda et al., and Newell et al. teach the limitation of claim 3.

Newell et al. teach having multilayer package (column 5 lines 46-56), which means a common ground plane for the first and second band-pass filters to be mounted on.

Regarding claim 5, Heinonen and Toda et al. teach the limitation of claim 1.

But, Heinonen and Toda et al. do not expressly disclose further comprising passive components between the switch and the first and second band-pass filters, the passive components for adjusting impedance.

Newell et al. teach using transmission lines to adjust impedance between filters and switch (208 of Fig. 2, column 2 lines 41-53).

Art Unit: 2618

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate transmission line taught by Newell et al. into between the switch and the first and second band-pass filters of the modified circuit arrangement of Heinonen and Toda et al., in order to provide phase transmission.

Regarding claim 15, Heinonen and Toda et al. teach the limitation of claim 1.

But, Heinonen and Toda et al. do not expressly disclose the first, second and third band-pass filters comprise surface acoustic wave filters.

Newell et al. teaches using surface acoustic wave filters (column 5 lines 46-56).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate using surface acoustic wave filter taught by Newell et al. into the modified circuit arrangement of Heinonen and Toda et al., in order to be suitable for application usage.

Regarding claims 17-18, Heinonen, Toda et al. and Newell et al. teach the limitation as explained in the response to claim 15 above.

4. Claims 6-7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heinonen (US Patent#5896562) in view of Toda et al. (US Patent#6751471), Young (US Patent#6643522), and Newell et al. (US Patent#5815804).

Regarding claim 6, Heinone, Toda et al., and Young teach the limitation of claim 2.



Art Unit: 2618

Young teaches the isolator comprising a circulator (52 of Fig. 5).

But, Heinonen, Toda et al. and Young do not expressly disclose a passive component between the isolator and the third band-pass filter, the passive component for adjust impedance.

Newell et al. teach using transmission lines to adjust impedance between filters and switch (208 of Fig. 2, column 2 lines 41-53) and multilayer module (column 3 lines 49-60).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate transmission lines taught and arranging circuit on multilayer taught by Newell et al. into the modified circuit arrangement of Heinonen, Toda et al., and Young, in order to provide phase reception and increase chip performance and eliminate noise.

Regarding claim 7, Heinonen, Toda et al., and Young teach the limitation of claim 2.

But, Heinonen, Toda et al., and Young do not expressly disclose the isolator, the switch and passive components comprise parts of a multilayer module.

Newell et al. teach using transmission lines to adjust impedance between filters and switch (208 of Fig. 2, column 2 lines 41-53) and multilayer module (column 3 lines 49-60).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate transmission lines taught and arranging circuit on multilayer taught by Newell et al. into the modified circuit arrangement of Heinonen, Toda et al., and Young, in order to provide phase transmission and increase chip performance and eliminate noise.

Regarding claim 16, Heinonen, Toda et al., and Young teach the limitation of claim 2.

Art Unit: 2618

But, Heinonen, Toda et al., and Young do not expressly disclose the first, second and third band-pass filters comprise surface acoustic wave filters.

Newell et al. teaches using surface acoustic wave filters (column 5 lines 46-56).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate using surface acoustic wave filter taught by Newell et al. into the modified circuit arrangement of Heinonen, Toda et al., and Young, in order to be suitable for application usage.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heinonen (US Patent#5896562) in view of Toda et al. (US Patent#6751471) and Weissman et al. (US2003/0050018).

Regarding claim 9, Heinonen and Toda et al. teach the limitation of claim 1.

But, Heinonen and Toda et al. do not expressly disclose the first and second amplifiers have amplifications of less than 26dB.

Weissman et al. teach the first and second amplifiers have amplifications of less than 26dB (paragraph 0020).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate amplifiers having amplifications of less than 26 dB taught by Weissman et al. into the modified circuit arrangement of Heinonen and Toda et al., in order to be suitable for application.

Art Unit: 2618

6. Claims 10 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heinonen (US Patent#5896562) in view of Toda et al. (US Patent#6751471), and Newell et al. (US Patent#5815804).

Regarding claim 10, Heinonen teaches circuitry comprising:

a transmitting portion (TXC1 or TXC2 of Fig. 3); and

a receiving portion (RXC1 or RXC2 of Fig. 3);

wherein the transmitting portion comprises plural signal lines, each of the plural signal lines for transmitting a signal in a different frequency band, each of the plural signal lines (TXC1 and TXC2 of Fig. 3) comprising, in order, a switch (380 of Fig. 3) for connecting an antenna (302 of Fig. 3) to a signal line (TXC1 or TXC2 of Fig. 3), a band-pass filter (372 or 392 of Fig. 3), an amplifier (370 or 390 of Fig. 3), and a band-pass filter (368 or 388 of Fig. 3); and

wherein the receiving portion comprises a single signal line for receiving a signal from an external device, the single signal line comprising a passive component, and a band-pass filter (as taught above).

But, Heinonen does not expressly disclose a passive component and the last band-pass filter being a surface wave filter; and the single signal line comprising an only signal line in the receiving portion for passing signals from the external device.

Newell et al. teach using surface wave filter in transceiver (column 5 lines 46-56); and using transmission lines to adjust impedance between filters and switch (208 of Fig. 2, column 2 lines 41-53).

Toda et al. teach a receiving circuit comprising: a third signal line that corresponds to a third frequency band; and a third band-pass filter in series with the third signal line (401 of Fig. 14);

Art Unit: 2618

wherein the third signal line comprises an only signal transmission line in the receiving circuit for passing signals from an external device (receiving part of Fig. 14).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate using surface wave filter and passive component taught by Newell et al. and combining receiving lines taught by Toda et al. into the circuitry of Heinonen, in order to provide phase transmission and be suitable for application usage with size and cost reduction.

Regarding claim 12, Heinonen, Toda et al., and Newell et al. teach the limitation of claim 10.

Newell et al. teach passive components in the transmitting portion adjust an impedance between the switch and band-pass filters in the transmitting portion (208 of Fig. 2, column 2 lines 41-53).

Regarding claim 13, Heinonen, Toda et al., and Newell et al. teach the limitation of claim 10.

Newell et al. teach the switch, and passive components of the transmitting portion and the receiving portion comprise part of a multilayer module (column 3 lines 49-60, column 4 lines 51-56, column 5 lines 46-56).

Regarding claim 14, Heinonen, Toda et al., and Newell et al. teach the limitation of claim 10.

Newell et al. teach the switch comprises at least one of a field effect transistor, diodes, and mechanical components (column 4 lines 46-50).

Art Unit: 2618

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heinonen (US Patent#5896562) in view of Toda et al. (US Patent#6751471), Newell et al. (US Patent#5815804), and Young (US Patent#6643522).

Regarding claim 11, Heinonen, Toda et al., and Newell et al. teach the limitation of claim 10.

But, Heinonen, Toda et al., and Newell et al. do not expressly disclose wherein the circuit arrangement further comprises an isolator between the transmitting circuit and the receiving circuit.

Young teaches an isolator between the transmitting circuit and the receiving circuit (52 of Fig. 5, column 5 line 65 to column 6 line 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate isolator between transmitting circuit and receiving circuit taught by Young into the modified circuit arrangement of Heinonen, Toda et al., and Newell et al., in order prevent signal interference between transmitting circuit and receiving circuit.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

Art Unit: 2618

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zhiyu Lu whose telephone number is (571) 272-2837. The examiner can normally be reached on Weekdays: 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571) 272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Zhiyu Lu  
February 26, 2007

  
**NAY MAUNG**  
**SUPERVISORY PATENT EXAMINER**